STATE FOREST LAND
ENVIRONMENTAL CHECKLIST

Purpose of Checklist:

The State Environmental Policy Act (SEPA), chapter 43.21C RCW, requires all governmental agencies to consider the environmental impacts of a proposal before making decisions. An environmental impact statement (EIS) must be prepared for all proposals with probable significant adverse impacts on the quality of the environment. The purpose of this checklist is to provide information to help you and the agency identify impacts from your proposal (and to reduce or avoid impacts from the proposal, if it can be done) and to help the agency decided whether an EIS is required.

Instructions for Applicants:

This environmental checklist asks you to describe some basic information about your proposal. Governmental agencies use this checklist to determine whether the environmental impacts of your proposal are significant, requiring preparation of an EIS. Answer the questions briefly, with the most precise information known, or give the best description you can. *Questions in italics are supplemental to Ecology's standard environmental checklist. They have been added by the DNR to assist in the review of state forest land proposals. Adjacency and landscape/ watershed-administrative-unit (WAU) maps for this proposal are available on the DNR internet website at http://www.dnr.wa.gov under "SEPA Center." These maps may also be reviewed at the DNR regional office responsible for the proposal. This checklist is to be used for SEPA evaluation of state forest land activities.*

You must answer each question accurately and carefully, to the best of your knowledge. In most cases, you should be able to answer the questions from your own observations or project plans without the need to hire experts. If you really do not know the answer, or if a question does not apply to your proposal, write "do not know" or "does not apply." Complete answers to the questions now may avoid unnecessary delays later. *All of the questions are intended to address the complete proposal as described by your response to question A-11. The proposal acres in question A-11 may cover a larger area than the forest practice application acres, or the actual timber sale acres.*

Some questions ask about governmental regulations, such as zoning, shoreline, and landmark designations. Answer these questions if you can. If you have problems, the governmental agencies can assist you.

The checklist questions apply to all parts of your proposal, even if you plan to do them over a period of time or on different parcels of land. Attach any additional information that will help describe your proposal or its environmental effects. The agency to which you submit this checklist may ask you to explain your answers or provide additional information reasonably related to determining if there may be significant adverse impact.

Use of checklist for nonproject proposals:

Complete this checklist for nonproject proposals, even though questions may be answered " does not apply." IN ADDITION, complete the SUPPLEMENTAL SHEET FOR NON PROJECT ACTIONS (part D).

For nonproject actions, the references in the checklist to the words "project," "applicant," and "property or site" should be read as "proposal," "proposer" and "affected geographic area," respectively.

A. BACKGROUND

1. Name of proposed project, if applicable:

   Timber Sale Name: **DOUBLE BARREL** *Agreement #:***30-084975**

2. Name of applicant: **Washington State Department of Natural Resources**

3. Address and phone number of applicant and contact person:

   Pacific Cascade Region
   601 Bond Road
   PO Box 280
   Castle Rock, Washington 98611-0280
   Phone: (360) 577-2025
   Contact Person: Marcus Johns

4. Date checklist prepared: **07/27/2009**

5. Agency requesting checklist: **Washington State Department of Natural Resources**

6. Proposed timing or schedule (including phasing, if applicable):

   a. *Auction Date:* **February 25, 2010**
   b. *Planned contract end date (but may be extended):* **December 31, 2011**
   c. *Phasing:* **N/A**

7. Do you have any plans for future additions, expansion, or further activity related to or connected with this proposal? If yes, explain.

   Timber Sale

   a. *Site preparation:*

      Site prep may be used to ensure that planting can be achieved at acceptable stocking levels to meet or exceed Forest Practice standards following harvest.

   b. *Regeneration Method:*

      The units will be hand planted following harvest.

   c. *Vegetation Management:*

      Possible herbicide or mechanical treatments could occur following harvest. Treatments will be based on vegetative competition, and will ensure a free-to-grow status that complies with Forest Practices standards.

d. *Thinning:*

Pre-commercial thinning needs will be assessed at approximately 15 years of age. Commercial thinning potential will be assessed at approximately 25 years of age. Thinnings will be done as needed to meet desired density, stocking, species diversity, and growth targets.

Roads: **Roads remaining at the termination of the sale may be used for future forest management activities. Road maintenance and periodic ditch and culvert cleanout may occur as necessary.**

Rock Pits and/or Sale: **The L-3140 Quarry, Quick Quarry, and Lincoln Creek Quarry may be used as rock sources for this proposal and for future activities.**

Other: **Landing slash piles may be burned following harvest activities. Firewood salvage may occur after harvest activities.**

8. List any environmental information you know about that has been prepared, or will be prepared, directly related to this proposal.

☐*303 (d) – listed water body in WAU:* ☐*temp* ☐*sediment* ☐*completed TMDL (total maximum daily load):*
The map dated 2008 provided by DOE at their web site (http://apps.ecy.wa.gov/wqawa/viewer.htm) no longer identifies the streams per the 2004 data as 303(d) listed for the Elk Creek or Hope Creek WAUs. Note: The 2004 SEPA maps associated with this proposal do not match the 2008 information.
☐*Landscape plan:*
☐*Watershed analysis:*
☐*Interdisciplinary team (ID Team) report:*
☒*Road design plan:* **Available upon request at Pacific Cascade Region Office.**
☐*Wildlife report:*
☐*Geotechnical report:*
☒*Other specialist report(s):* **Old Growth assessment, Cultural Resources Site Protection Plan**
☐*Memorandum of understanding (sportsmen's groups, neighborhood associations, tribes, etc.):*
☒*Rock pit plan:* **Available upon request at Pacific Cascade Region Office.**
☒*Other:* **Spotted owl habitat maps, marbled murrelet habitat maps, Forest Practice activity maps, WAU maps for rain-on-snow areas, Policy for Sustainable Forests (PSF, December 2006), State Soil Survey, DNR GIS databases, Habitat Conservation Plan (HCP, January 1997), HCP Checklist, Weighted Old Growth Habitat Index (WOGHI), Slope Stability Checklist, Planning and Tracking Special Concerns Report and associated maps, all available upon request at the Pacific Cascade Region Office.**

9. Do you know whether applications are pending for governmental approvals of other proposals directly affecting the property covered by your proposal? If yes, explain.

None known.

10. List any government approvals or permits that will be needed for your proposal, if known.

☒*HPA* ☒*Burning permit* ☐*Shoreline permit* ☒*Incidental take permit* **1168 and PRT B 812521** ☒*FPA #* **2920234** ☐*Other:*

11. Give brief, complete description of our proposal, including the proposed uses and the size of the project and site. There are several questions later in this checklist that ask you to describe certain aspects of your proposal. You do not need to repeat those answers on this page. (Lead agencies may modify this form to include specific information on project description.)

a. *Complete proposal description:*

Double Barrel is a 7 unit, 216.5 gross acre variable retention harvest. This proposal is located in the Elk Creek and Hope Creek WAUs. Eight trees per acre will be left mostly clumped, with a few individual trees scattered throughout the units. This proposal will include 8,100 feet of new road construction, 8 miles of pre-haul maintenance, and 1,214 feet of road abandonment. Most of the timber sale area consists of steep topography, which will be logged using cable systems. Unit 3, as well as portions of units 1, 2, 5, and 7 will be logged using ground-based systems.

Unit	Proposal Acres	RMZ/WMZ Acres	Unstable Slope Acres	Existing Road Acres	Sale Acres	Leave Tree Clump Acres	Harvest Acres
	gross			*within unit*			*net*
1	68	22	0	0	46	3	43
2	58	19	0	0	39	2	37
3	46	16	0	0	30	2	28
4	15	4	0	0	11	1	10
5	29	9	0	0	20	1	19
6	15	10	0*	0	5	1.5	3.5
7	107	45	0	0	62	5	57
8(ROW)	3.5	0	0	0	3.5	0	3.5
Totals	341.5	125	0	0	216.5	15.5	201

* Unstable slope acres are included in the leave tree clump acres. These numbers are estimates because they have been rounded off, with the exception of Unit 6 and Unit 8 ROW.

b. *Timber stand description pre-harvest (include major timber species and origin date), type of harvest, overall unit objectives.*

Stand description:
Stand ages for all units are approximately 65 to 70 years old.

- **Unit 1 has smaller timber higher upslope consisting of a mix of Douglas-fir and bigleaf maple. Downslope is a mix of larger Douglas-fir and red alder. The understory consists of vine maple and swordfern.**
- **Unit 2 is a mix of Douglas-fir and red alder, with western hemlock, western redcedar, bigleaf maple and black cottonwood in patches throughout the unit. The understory is vine maple, swordfern, Oregon grape, salal, and trailing blackberry.**
- **Unit 3 consists of a mix of Douglas-fir and western hemlock. The understory is western redcedar, vine maple and swordfern. Red alder can be found in and along the RMZs.**

- **Unit 4 is a mix of timber species including Douglas-fir, red alder, bigleaf maple, western redcedar and western hemlock. Conifer species occur mainly upslope, with red alder and bigleaf maple being dominant in and adjacent to the RMZ.**
- **In unit 5, dominant species are Douglas-fir and red alder. Western hemlock and western redcedar also occur in the unit. There are a couple of older Douglas-fir legacy trees in and adjacent to the RMZ, estimated at 120 to 150 years old. The understory is made up of vine maple, swordfern and smaller, suppressed western redcedar and western hemlock.**
- **Unit 6 is mainly Douglas-fir, with codominant species being red alder and western hemlock. The understory consists of bigleaf maple, vine maple, Pacific yew and swordfern.**
- **Unit 7 dominant species are Douglas-fir and red alder. Other species present include western hemlock, western redcedar and bigleaf maple. The understory is vine maple and Oregon grape on the ridgetops, and swordfern on the slopes.**

Type of Harvest:
This proposal involves a variable retention harvest of 216.5 total sale acres in 7 separate harvest units plus one right-of-way, with a total of 125 acres left in RMZ's and 15.5 acres left in leave tree clumps.

Overall Unit Objectives:
1) **The overall objective of this timber sale is to provide financial benefit to the trust beneficiaries and regenerate a new forest, while maintaining wildlife habitat through the retention of wildlife trees, legacy trees and RMZ's. This area will be managed for continued upland forest resource management.**
2) **Comply with internal procedures derived from the Forest Practices rules, PSF and the HCP. There is a status 4 owl site near Unit 7 and winter steelhead are listed as healthy in adjacent streams.**
3) **Maintain water quality and fish habitat, retain legacy trees and minimize impacts to soils.**

c. *Road activity summary. See also forest practice application (FPA) for maps and more details.*

Type of Activity	How Many	Length (feet) (Estimated)	Acres (Estimated)	Fish Barrier Removals (#)
Construction		8,100	4	0
Reconstruction		0		0
Abandonment		1,214	1.7	0
Bridge Install/Replace	0			0
Culvert Install/Replace (fish)	0			0
Culvert Install/Replace (no fish)	1			

12. Location of proposal. Give sufficient information for a person to understand the precise location of your proposed project, including a street address, if any, and section, township, and range, if known. If a proposal would occur over a range of area, provide the range or boundaries of the site(s). Provide a legal description, site plan, vicinity map, and topographic map, if reasonably available. While you should submit any plans required by the agency, you are not required to duplicate maps or detailed plans submitted with any permit applications related to this checklist. *(See timber sale map available at DNR region office, and/or color landscape/WAU map on the DNR website http://www.dnr.wa.gov under "SEPA Center.")*

a. Legal description:

Sections 15 (Lincoln Creek Quarry), 26, 27, 28, 33, 34, and 35, T14N, R05W, W.M.

b. *Distance and direction from nearest town (include road names):*

This proposal is approximately 20 miles west of Chehalis, WA. From Highway 6, take Stevens road to Elk Creek county road. Go west to Chandler road, approximately 1 mile. Turn right on Chandler road. Continue 0.8 miles, then go left on the L-3110 to access units 1 and 2. For units 3-7, take Chandler Rd. about 1 more mile to the L-3000.

c. *Identify the watershed administrative unit (WAU), the WAU Sub-basin(s), and acres. (See also landscape/WAU map on DNR website http://www.dnr.wa.gov under " SEPA Center.")*

WAU Name	WAU Acres	Proposal Acres
HOPE CREEK	25348.4	130
ELK CREEK	37433.9	86

*No information on sub-basins.

13. *Discuss any known future activities not associated with this proposal that may result in a cumulative change in the environment when combined with the past and current proposal(s). (See digital ortho-photos for WAU and adjacency maps on DNR website http://www.dnr.wa.gov under "SEPA Center" for a broader landscape perspective.)*

This proposal is located within the Elk Creek and Hope Creek WAUs. Agriculture and home sites are located in the valleys near the major streams with some home sites located in the uplands. There appears to be a recent trend towards increasing conversion of agriculture and forestry lands to home sites in the low to middle elevations. The uplands are primarily managed for timber production. Ownership includes large industrial forests, small private forests, and DNR managed forests. Forest stands within the WAU appear to be almost exclusively second and third growth stands. The number of Forest Practices shown on the WAU map (referenced above on the DNR website) along with observations within the WAU indicates that timber stands are intensively managed on relatively short rotations. Management includes regeneration harvests, thinnings, partial cuts, reforestation, and stand maintenance activities.

The following tables are an estimated summary of past and future activity on DNR-managed land and privately managed land in the Elk Creek and Hope Creek WAUs (information is based off of Forest Practices applications that have been approved in the last seven years compiled by the Department's GIS database). No attempt was made to predict future timber harvest on private ownerships within these WAUs. The source of this information only provided the acreage on the WAU level. WAU reports were requested and generated July 29, 2009.

Elk Creek WAU	WAU ACRES	ACRES OF EVEN-AGED HARVEST WITHIN THE LAST SEVEN YEARS	ACRES OF UNEVEN-AGED HARVEST WITHIN THE LAST SEVEN YEARS	ACRES OF PROPOSED EVEN-AGED HARVEST IN THE FUTURE (FY 2010/2011)	ACRES OF PROPOSED UNEVEN-AGED HARVEST IN THE FUTURE (FY 2010/2011)
DNR MANAGED LAND	12,048 (32%)	814	194	1776	0
PRIVATE OWNERSHIP	25,386 (68%)	961	12	UNKNOWN	UNKNOWN
TOTAL	37,434	1,775	206	1776	UNKNOWN

Hope Creek WAU	WAU ACRES	ACRES OF EVEN-AGED HARVEST WITHIN THE LAST SEVEN YEARS	ACRES OF UNEVEN-AGED HARVEST WITHIN THE LAST SEVEN YEARS	ACRES OF PROPOSED EVEN-AGED HARVEST IN THE FUTURE (FY 2010/2011)	ACRES OF PROPOSED UNEVEN-AGED HARVEST IN THE FUTURE (FY 2010/2011)
DNR MANAGED LAND	5,156 (20%)	550	269	338	0
PRIVATE OWNERSHIP	20,069 (79%)	966	255	UNKNOWN	UNKNOWN
TOTAL	25,348	1,516	524	338	UNKNOWN

B. ENVIRONMENTAL ELEMENTS

1. Earth

a. General description of the site (check one):

☐Flat, ☐Rolling, ☒Hilly, ☐Steep Slopes, ☐Mountainous, ☐Other:

1) General description of the WAU or sub-basin(s) (landforms, climate, elevations, and forest vegetation zone).

The Elk Creek WAU is generally hilly with topography ranging between 400 and 2,400 feet in elevation. There are slopes up to 90% but most range from 40% to 80% in the upper portions of the drainages and between 20% to 50% in the lower portions of the drainages. The WAU averages about 70 inches of rain per year. The major timber type is Douglas-fir with mixed western hemlock, western redcedar and red alder. Elk Creek flows from the west to the east.

The Hope Creek WAU is typically lowland and hilly. Slopes range from 0-90%, with the steeper slopes in the upland, higher elevations. Elevation ranges from 200 to 2,400 feet. Average annual rainfall is 55 inches. The major timber type is Douglas-fir with mixed western hemlock, western redcedar and red alder.

2) Identify any difference between the proposal location and the general description of the WAU or sub-basin(s).

The proposal fits the general WAU descriptions above.

b. What is the steepest slope on the site (approximate percent slope)? **70%**

c. What general types of soils are found on the site (for example, clay, sand, gravel, peat, muck)? If you know the classification of agricultural soils, specify them and note any prime farmland. *Note: The following table is created from state soil survey data. It is a roll-up of general soils information for the soils found in the entire sale area. It is only one of several site assessment tools used in conjunction with actual site inspections for slope stability concerns or erosion potential. It can help indicate potential for shallow, rapid soil movement, but often does not represent deeper soil sub-strata. The actual soils conditions in the sale area may vary considerably based on land-form shapes, presence of erosive situations, and other factors. The state soil survey is a compilation of various surveys with different standards.*

State Soil Survey #	Soil Texture or Soil Complex Name	% Slope	Acres	Mass Wasting Potential	Erosion Potential
3851	V.COBBLY LOAM	30-65	55	MEDIUM	MEDIUM
7617	COBBLY SILT LOAM	30-65	37	MEDIUM	HIGH
9041	SILT LOAM	65-90	36	HIGH	HIGH
1008	LOAM	8-30	32	LOW	MEDIUM
3859	KATULA-ROCK OUTCROP-COMPLEX	30-65	20	No Data	No Data
9040	SILT LOAM	30-65	16	MEDIUM	MEDIUM
8068	SLT.CLY.LOAM	8-30	7	INSIGNIFIC'T	MEDIUM
9039	SILT LOAM	5-30	4	LOW	MEDIUM
0448	SILT LOAM	8-30	3	INSIGNIFIC'T	MEDIUM
8710	LOAM	30-65	3	MEDIUM	MEDIUM
7616	COBBLY SILT LOAM	5-30	2	INSIGNIFIC'T	MEDIUM
5630	SILT LOAM	3-20	1	INSIGNIFIC'T	MEDIUM

d. Are there surface indications or history of unstable soils in the immediate vicinity? If so, describe. **Yes.**

1) *Surface indications:*

There are surface indications of unstable slopes in the proposal area that are consistent with the typical unstable features found throughout the WAU, such as incised inner gorges, bedrock hollows and convergent headwalls. These areas are typically located in or around the headwalls of drainages or down along the larger stream channels. There is a small inner gorge feature in the eastern portion of Unit 6.

2) *Is there evidence of natural slope failures in the sub-basin(s)?*
☐*No* ☒*Yes, type of failures (shallow vs. deep-seated) and failure site characteristics:*

There are several shallow slope failures in the sub-basins. They are typically associated with smaller type 5 streams, headwalls or seeps and on slopes 65% or greater.

3) *Are there slope failures in the sub-basin(s) associated with timber harvest activities or roads?*
☐*No* ☒*Yes, type of failures (shallow vs. deep-seated) and failure site characteristics:*
Associated management activity:

There are multiple shallow slope failures associated with forest roads and timber harvest activities. Most of the observed failures are along roads or in plantations ranging from 2 to 10 years of age. The majority of those observed have occurred on private forest land. These slope failures have occurred on steep slopes, > 65%, and are typically associated with streams or seeps. Some small failures have occurred midslope where natural seeps have weakened the soil stability.

4) *Is the proposed site similar to sites where slope failures have occurred previously in the sub-basin(s)?*
☐*No* ☒*Yes, describe similarities between the conditions and activities on these sites:*

The proposal has some slopes that range between 60-65%, and in some places up to 70%, which is similar to those that have failed in other portions of the sub-basin. These slopes will be cable-logged with lead end suspension to minimize ground disturbance, and no seeps have been observed within the harvest areas.

5) *Describe any slope stability protection measures (including sale boundary location, road, and harvest system decisions) incorporated into this proposal.*

A DNR geologist reviewed maps and photos of the area and found nothing of concern. Type 3 streams have no-harvest buffers averaging 195' to 200' in width. Type 4 streams have no-harvest buffers a minimum of 100' in width. Ground disturbance will be minimized by limiting the operation of ground-based harvesting equipment to slopes less than 35% and by requiring lead end suspension on cable settings. Where appropriate, leave trees were clumped in headwall areas or along small steep side channels. Roads were located on ridgetops or along slopes with no evidence of unstable slopes. Cross-drains and ditch-outs will be utilized on new road construction. In Unit 6, a small inner gorge that was observed by the field forester and a field forester with unstable slope experience. They identified the area and protected it with a 1.5 acre leave tree area.

e. Describe the purpose, type, and approximate quantities of any filling or grading proposed. Indicate source of fill.
Approx. acreage new roads: **4** *Approx. acreage new landings:* **2** *Fill source:* **Native**

f. Could erosion occur as a result of clearing, construction, or use? If so, generally describe.

Some erosion could occur as a result of this proposal. Following the current DNR road construction standards, and utilizing prudent road locations and yarding restrictions, the amount and severity of the erosion will be minimized. Areas of exposed soil will be grass seeded after construction.

g. About what percent of the site will be covered with impervious surfaces after project construction (for example, asphalt or buildings)? *Approximate percent of proposal in permanent road running surface (includes gravel roads):*

About 2%.

h. Proposed measures to reduce or control erosion, or other impacts to the earth, if any:
(Include protection measures for minimizing compaction or rutting.)

<u>Measures to reduce erosion on roads or during active road construction:</u>

- **Seasonal timing restrictions when appropriate during wet weather conditions,**
- **Soils exposed during road construction will be grass seeded,**
- **Roads will be crowned, ditched, and cross-drained or out-sloped to provide for water drainage,**
- **Sediment delivery will be addressed as needed during operations with the use of water bars or silt traps,**
- **There will be periodic maintenance and inspection of the road system to ensure proper drainage,**
- **Optional roads and landings constructed with the proposal may be abandoned after harvest.**

<u>Measures to reduce erosion during active logging operation:</u>

- **Timber shall be felled and yarded away from all streams,**
- **Ground-based yarding will be restricted to slopes less than 35% and during dry soil conditions unless authorized by the Contract Administrator,**
- **The lead-end of logs will be suspended during all yarding operations,**
- **A 30 foot equipment limitation zone will be utilized on type 5 streams.**
- **Leave tree areas will protect potentially unstable features.**

2. Air

a. What types of emissions to the air would result from the proposal (i.e., dust *from truck traffic, rock mining, crushing or hauling*, automobile, odors, industrial wood smoke) during construction and when the project is completed? If any, generally describe and give approximate quantities if known.

Minor amounts of engine exhaust from logging and road construction equipment and dust from vehicle traffic on roads will be emitted. If landing debris is burned after harvest is completed, smoke will be generated. There will be no emissions once the proposal is complete.

b. Are there any off-site sources of emissions or odor that may affect your proposal? If so, generally describe.

None known.

c. Proposed measures to reduce or control emissions or other impacts to air, if any:

If landing debris is burned, it will be in accordance with Washington State's Smoke Management Plan. A burn permit will be obtained before burning occurs.

3. Water

a. Surface:

1) Is there any surface water body on or in the immediate vicinity of the site (including year-round and seasonal streams, saltwater, lakes, ponds, wetlands)? If yes, describe type and provide names. If appropriate, state what stream or river it flows into. *(See timber sale map available at DNR region office, or forest practice application base maps.)*

Yes, see table below.

a) Downstream water bodies:

Absher, Dunn and Capps Creeks all flow directly into the Chehalis River. Deer Creek is a tributary to Elk Creek, which flows directly into the Chehalis River.

b) Complete the following riparian & wetland management zone table:

Wetland, Stream, Lake, Pond, or Saltwater Name (if any)	Water Type	Number (how many?)	Avg RMZ/WMZ Width in Feet (per side for streams)
Deer Creek	**3**	**1**	**200'**
Dunn Creek	**3**	**1**	**200'**
Absher Creek	**3**	**1**	**200'**
Capps Creek	**3**	**1**	**195'**
Unnamed	**3**	**10**	**195'-200'**
Unnamed	**4**	**3**	**100'**
Unnamed	**5**	**19**	**N/A**

c) List RMZ/WMZ protection measures including silvicultural prescriptions, road-related RMZ/WMZ protection measures, and wind buffers.

Type 5 streams will have a 30' wide equipment limitation zone. Leave trees were clumped and placed near type 5 streams where possible.

2) Will the project require any work over, in, or adjacent to (within 200 feet) to the described waters? If yes, please describe and attach available plans.
☐*No* ☒*Yes (See RMZ/WMZ table above and timber sale map available at DNR region office.)*
Description (include culverts):

Tailhold cables may be strung through the type 3 and type 4 RMZs. Type 5 streams may have tailhold cable strung through them as well as timber yarded across them. Where yarding occurs near Type 5 streams, a 30-foot Equipment Limitation Zone will be utilized to maintain stream function, stream bank integrity and decrease possible sediment delivery. For new road construction, a culvert will be placed in one type 5 stream. Trees will be directionally felled away from all streams.

3) Estimate the amount of fill and dredge material that would be placed in or removed from surface water or wetlands and indicate the area of the site that would be affected. Indicate the source of fill material.

A culvert will be installed in one type 5 stream requiring 1,500 cubic yards of native fill material to be placed over the culvert.

4) Will the proposal require surface water withdrawals or diversions? Give general description, purpose, and approximate quantities if known. *(Include diversions for fish-passage culvert installation.)*
☐*No* ☒*Yes, description:*

There may be temporary water diversion during culvert placement in one type 5 stream.

5) Does the proposal lie within a 100-year floodplain? If so, note location on the site plan.
☒*No* ☐*Yes, describe location:*

6) Does the proposal involve any discharges of waste materials to surface waters? If so, describe the type of waste and anticipated volume of discharge.
☒*No* ☐*Yes, type and volume:*

7) Does the sub-basin contain soils or terrain susceptible to surface erosion and/or mass wasting? What is the potential for eroded material to enter surface water?

Yes. Generally, the high potential areas associated with erosion or mass wasting are located on convergent slopes of 65% or greater and often involve unstable soils and/or steep head walls. Some past failures have entered streams in small amounts. With the mitigating measures to be implemented, this proposal is not expected to contribute material to surface waters. See B.1.c, B.1.d, B.1.f, B.1.h, and B.3.a.9.

8) *Is there evidence of changes to the channels in the WAU and sub-basin(s) due to surface erosion or mass wasting (accelerated aggradations, erosion, decrease in large organic debris (LOD), change in channel dimensions)?*
☐*No* ☒*Yes, describe changes and possible causes:*

None observed within the proposed harvest area, but there is evidence of surface erosion and mass wasting in various portions of the WAU. Elevated streambeds attributed to accelerated aggradations of sediment in the channels are the main indicator of channel changes in the WAU. There is also a general decrease in the amount of large woody debris (LWD) in streams that were not buffered during past harvest activities due to a decrease in recruitment and the natural decay process removing existing LWD. Where the stream banks erode or headwalls fail, the channels may change dimension and/or direction over time. Deer Creek has large accumulations of woody debris, sediment deposits, gravel bars and areas of scouring resulting from past storm events.

9) *Could this proposal affect water quality based on the answers to the questions 1-8 above?*
☐*No* ☒*Yes, explain:*

This proposal could possibly introduce minor amounts of sediment into the streams adjacent to the proposal area as a result of road building or harvest activities. By implementing the Department's HCP, following Forest Practices rules, and implementing the mitigation measures in B.1.f and B.1.h above, this proposal is expected to have minimal to no effect on water quality. The RMZs described in B.3.c, as well as locating retention trees along portions of type 5 streams should maintain stream function and stream bank integrity, provide shade, and recruit LWD.

10) *What are the approximate road miles per square mile in the WAU and sub-basin(s)?*
Are you aware of areas where forest roads or road ditches intercept sub-surface flow and deliver surface water to streams, rather than back to the forest floor?
☒*No* ☐*Yes, describe:*

In the Elk Creek WAU there are 5.3 miles of road per square mile.
In the Hope Creek WAU there are 4.6 miles of road per square mile.
Data was not available at the sub-basin level.

11) *Is the proposal within a significant rain-on-snow (ROS) zone? If not,* ***STOP HERE*** *and go to question B-3-a-13 below. Use the WAU or sub-basin(s) for the ROS percentage questions below.*
☒*No* ☐*Yes, approximate percent of WAU in significant ROS zone.*
Approximate percent of sub-basin(s):

12) *If the proposal is within the significant ROS zone, what is the approximate percentage of the WAU or sub-basin(s) within the significant ROS zone (all ownerships) that is (are) rated as hydrologically mature?*

13) *Is there evidence of changes to channels associated with peak flows in the WAU or sub-basin(s)?*
☐*No* ☒*Yes, describe observations:*

Normally, there are few significant changes associated with peak flows in the WAU or sub-basins. However, in the winters of 2007 and 2009, two 100-year plus flood events occurred. These storms set rainfall and flood level records in Southwest Washington. The event caused many shallow mass-wasting events. Many stream channels were altered in this event due to extremely high stream flows with accompanying sediment loads and possibly large woody debris delivery. The full extent of this is not known. See 3.a.8.

14) *Based on your answers to questions B-3-a-10 through B-3-a-13 above, describe whether and how this proposal, in combination with other past, current, or reasonably foreseeable proposals in the WAU and sub-basin(s), may contribute to a peak flow impact.*

This proposal may slightly change the timing, duration, and amount of water in a peak flow event. Flow rates may increase slightly due to decreased transpiration and interception. Leave trees scattered and clumped throughout the units (a minimum of eight trees per acre) help maintain water quality and reduce peak flow, in addition to RMZs along type 3 and 4 waters.

15) *Is there water resource (public, domestic, agricultural, hatchery, etc.), or area of slope instability, downstream or downslope of the proposed activity that could be affected by changes in surface water amounts, quality, or movements as a result of this proposal?*
☐*No* ☒*Yes, possible impacts:*

The Department of Ecology lists several surface water rights located in adjacent sections. Average 195' to 200' RMZ's on type 3 streams, minimum 100' RMZ's on type 4 streams, and retention trees both scattered and clumped throughout the harvest areas have been utilized for this proposal and no potential impacts are anticipated.

16) *Based on your answers to questions B-3-a-10 through B-3-a-15 above, note any protection measures addressing possible peak flow/flooding impacts.*

Policies or procedures in place to minimize possible effects of peak flow event:

- **Type 3 RMZs averaging 195-200 feet wide,**
- **Type 4 RMZs a minimum of 100 feet wide,**
- **Retention trees (at least 8 trees per acre),**
- **Restricting unit size to 100 acres or less,**
- **Allowing green-up of immediately adjacent stands,**
- **See B.1.h for further protection measures.**

b. Ground *Water*:

1) Will ground water be withdrawn, or will water be discharged to ground water? Give general description, purpose, and approximate quantities if known.

No.

2) Describe waste material that will be discharged into the ground from septic tanks or other sources, if any (for example: Domestic sewage; industrial, containing the following chemicals; agricultural; etc.). Describe the general size of the system, the number of such systems, the number of houses to be served (if applicable), or the number of animals or humans the system(s) are expected to serve.

None.

3) Is there a water resource use (public, domestic, agricultural, hatchery, etc.), or area of slope instability, downstream or down slope of the proposed activity that could be affected by changes in groundwater amounts, timing, or movements as a result this proposal?
☒*No* ☐*Yes, describe:*

a) Note protection measures, if any.

Average 195-200 foot wide RMZ's on type 3 streams, minimum 100 foot wide RMZ's on type 4 streams, 30 foot wide equipment limitation zones on type 5 streams, and retention trees both scattered and clumped throughout the harvest areas have been utilized for this proposal and no potential impacts are anticipated.

c. Water Runoff (including storm water):

1) Describe the source of runoff (including storm water) and method of collection and disposal, if any (include quantities, if known). Where will this water flow? Will this water flow into other waters? If so, describe.

Storm water runoff from roads and intercepted subsurface flow will be collected by roadside ditches and ditch-outs and diverted onto the forest floor to allow infiltration. Ditch-outs and cross drain culverts will be placed to minimize the amount of ditch water directly entering existing stream channels.

2) Could waste materials enter ground or surface waters? If so, generally describe.

Minor amounts of logging slash may enter type 5 streams within the proposal. Insignificant amounts of oil and other lubricants could be discharged inadvertently as a result of heavy equipment use. If spills occur, they will be required to be contained and cleaned up.

a) Note protection measures, if any.

Equipment use will be limited along streams in accordance with Forest Practices rules. Concentrations of logging slash may be removed from flowing streams if needed. No lubricants will be disposed of on site. See 3.a.1.c.

d. Proposed measures to reduce or control surface, ground, and runoff water impacts, if any:
See surface water, ground water, and water runoff sections above, questions B-3-a-1-c, B-3-a-16, B-3-b-3-a, and B-3-c-2-a.

4. Plants

a. Check or circle types of vegetation found on the site:

☒deciduous tree: ☒alder, ☒maple, ☐aspen, ☒*cottonwood,* ☐*western larch,* ☐*birch,* ☒other: vine maple
☒evergreen tree: ☒*Douglas fir,* ☒*grand fir,* ☐*Pacific silver fir,* ☐*ponderosa pine,* ☐*lodgepole pine,* ☒*western hemlock,* ☐*mountain hemlock,* ☐*Englemann spruce,* ☐*Sitka spruce,* ☒*red cedar,* ☐*yellow cedar,* ☒other: *Pacific yew*
☒shrubs: ☒*huckleberry,* ☐*salmonberry,* ☒*salal,* ☒*other: Oregon grape*
☐grass
☐pasture
☐crop or grain
☒wet soil plants: ☐cattail, ☐buttercup, ☐bullrush, ☒skunk cabbage, ☒*devil's club,* ☐other:
☐water plants: ☐water lily, ☐eelgrass, ☐milfoil, ☐other:
☒other types of vegetation: swordfern
☐*plant communities of concern:*

b. What kind and amount of vegetation will be removed or altered? *(See answers to questions A-11-a, A-11-b, B-3-a-1-b and B-3-a-1-c. The following sub-questions merely supplement those answers.)*

Approximately 7,513 MBF of Douglas-fir, western hemlock, red alder, and minor amounts of western redcedar, bigleaf maple, and grand fir will be removed. The age of the timber is approximately 65 to 70 years old.

1) Describe the species, age, and structural diversity of the timber types immediately adjacent to the removal area. (See landscape/WAU and adjacency maps on the DNR website at: http://www.dnr.wa.gov under "SEPA Center.")

Unit 1: To the north is an 8 year old plantation. To the south is a 19 year old plantation. Across the road to the east is a 35 year old plantation. To the west is the RMZ with mixed species approximately 65 years old.

Unit 2: To the north and south are 19 year old plantations. Across the road to the east is a 35 year old plantation. To the west is the RMZ with mixed species approximately 65 years old.

Unit 3: To the east and west are approximately 15 year old plantations. Also to the west and south is the Capps Creek RMZ. To the north is a 5 year old plantation.

Unit 4: To the south is a 5 year old plantation. To the west is an approximately 18 year old plantation. To the north is a 25 year old plantation. To the east is the Absher Creek RMZ with mixed species approximately 65 years old.

Unit 5: To the east and west are 12 year old plantations. To the north and south are RMZs ranging in age from 65-120 years old, and an approximately 25 year old plantation.

Unit 6: To the west is a 12 year old plantation. To the south is an approximately 25 year old plantation. To the north is an RMZ with mixed species approximately 65 years old. To the east is an RMZ approximately 65 years old.

Unit 7: To the north is timber very similar to the unit and approximately 66 years old. The remainder of the unit is surrounded by RMZ with mixed species approximately 65 years old.

2) *Retention tree plan:*

A combination of Douglas-fir, western redcedar, bigleaf maple, red alder and western hemlock were left for green tree retention and snag recruitment. Reserve tree numbers were based on leaving a minimum of eight trees per acre. In Unit 6 extra trees were retained to help protect a small inner gorge feature. Trees were left primarily in clumps, as well as individual trees scattered throughout the harvest areas where appropriate. The leave tree design is conducive to safe cable harvesting operations, while distributing leave trees throughout the proposal where possible.

c. List threatened or endangered *plant* species known to be on or near the site.

TSU Number	FMU_ID	Common Name	Federal Listing Status	WA State Listing Status
None Found in Database Search				

d. Proposed landscaping, use of native plants, or other measures to preserve or enhance vegetation on the site, if any:

Native conifer species will be planted after harvest, likely including Douglas-fir, western hemlock and western redcedar. RMZs will preserve existing vegetation between the sale area and closest type 3 and type 4 streams. Retention tree clumps are located across the harvest area. Some clumps were selected for their species diversity. These clumps will provide a local seed source for native overstory and understory species. Some natural regeneration of native species will occur on site after harvest. Some trees with defects such as split or broken tops, dominant crowns, large diameters and large limbs were favored as leave trees to enhance wildlife potential. Legacy trees were identified and retained individually and in leave tree clumps.

5. Animal

a. Circle or check any birds animals *or unique habitats* which have been observed on or near the site or are known to be on or near the site:

birds: ☒hawk, ☐heron, ☐eagle, ☒songbirds, ☐*pigeon*, ☐other:
mammals: ☒deer, ☒bear, ☒elk, ☒beaver, ☐other:
fish: ☐bass, ☒salmon, ☒trout, ☐herring, ☐shellfish, ☐other:
unique habitats: ☐*talus slopes,* ☐*caves,* ☐*cliffs,* ☐*oak woodlands,* ☐*balds,* ☐*mineral springs*

b. List any threatened or endangered species known to be on or near the site *(include federal- and state-listed species).*

TSU Number	FMU_ID	Common Name	Federal Listing Status	WA State Listing Status
1	40610	SPOTTED OWL: Site:1104-DUNN CREEK	THREATENED	ENDANGERED
2	40611	SPOTTED OWL: Site:1104-DUNN CREEK	THREATENED	ENDANGERED
3	40613	SPOTTED OWL: Site:1104-DUNN CREEK	THREATENED	ENDANGERED
4	40614	SPOTTED OWL: Site:1104-DUNN CREEK	THREATENED	ENDANGERED
5	40605	SPOTTED OWL: Site:1104-DUNN CREEK	THREATENED	ENDANGERED
6	40606	WINTER STEELHEAD	NONE	HEALTHY
6	40606	SPOTTED OWL: Site:1104-DUNN CREEK	THREATENED	ENDANGERED
7	40607	WINTER STEELHEAD	NONE	HEALTHY
7	40607	SPOTTED OWL: Site:1104-DUNN CREEK	THREATENED	ENDANGERED

c. Is the site part of a migration route? If so, explain.
☒*Pacific flyway* ☐*Other migration route:* *Explain if any boxes checked:*

This proposal is located in the Pacific flyway, which is part of the Pacific Northwest forests. The area for this proposal is not generally the type of area used for resting or feeding by migratory waterfowl. Many Neo-tropical birds are closely associated with riparian areas, cliffs, snags and structurally unique trees. Riparian areas and special habitats are protected through implementation of DNR's Habitat Conservation Plan.

d. Proposed measures to preserve or enhance wildlife, if any:

Trees left along flowing waters help maintain water quality by maintaining shade, bank stability, and serve as wildlife habitat. Retention trees serve as perches and nest sites and will serve as ecological niches for wildlife. Larger diameter trees that have large limbs, open crowns, and broken tops will be left to preserve current habitat needs and provide future habitat opportunities for many species. These trees will become snags and retention trees in future

stands. Bigleaf maple seeds are an excellent source of food for small mammals and birds, and both bigleaf maple and black cottonwood have the propensity to develop cavities, which may serve as habitat for birds and small mammals in the future.

1) Note existing or proposed protection measures, if any, for the complete proposal described in question A-11.

Species /Habitat: **riparian dependent species and winter steelhead**
Protection Measures: **RMZ buffers for this proposal average 195'-200' feet wide along fourteen type 3 streams and a minimum 100-foot wide along two type 4 streams. These RMZs provide shade, maintain stream temperature, reduce potential sediment delivery, and deliver large woody debris, thus helping maintain water quality and providing migratory corridors for wildlife and maintain habitat for fish, reptiles, and other riparian obligate species. Under the HCP, these measures are deemed to provide adequate protection for forestry activities in potential riparian habitat.**

Species /Habitat: **Northern Spotted Owl**
Protection Measures: **The timber sale is located within a status 4 northern spotted owl circle based on WDFW's database. The timber sale is not located within a NRF/dispersal management area, nor is it within the best 70 acre core of the site center, thus our HCP northern spotted owl conservation strategy does not identify this area within its recovery strategy and does not apply to this activity. No conservation prescriptions will apply to this harvest regarding northern spotted owls, according to our HCP or Settlement Agreement.**

6. **Energy and Natural Resources**

a. What kinds of energy (electric, natural gas, oil, wood stove, solar) will be used to meet the completed project's energy needs? Describe whether it will be used for heating, manufacturing, etc.

Not applicable.

b. Would your project affect the potential use of solar energy by adjacent properties? If so, generally describe.

Not applicable.

c. What kinds of energy conservation features are included in the plans of this proposal? List other proposed measures to reduce or control energy impacts, if any:

Not applicable.

7. **Environmental Health**

a. Are there any environmental health hazards, including exposure to toxic chemicals, risk of fire and explosion, spill, or hazardous waste, that could occur as a result of this proposal? If so, describe.

Minimal amounts of oil and other lubricants may accidentally discharge during heavy machinery operation. There is some risk of fire if operations occur during dry times of the year.

1) Describe special emergency services that might be required.

Fire suppression services if needed. Pump trucks and/or pump trailers will be required on site during fire season. Other emergencies (health, chemical spills) would be addressed by appropriate entities.

2) Proposed measures to reduce or control environmental health hazards, if any:

No oil or lubricants will be disposed of on site. The cessation of operations may occur during periods of high fire danger. Fire tools and equipment will be kept on site during fire season. In the event of a lubricant spill the Purchaser will contact the DNR and the Department of Ecology.

b. Noise

1) What types of noise exist in the area which may affect your project (for example: traffic, equipment, operation, other)?

None.

2) What types and levels of noise would be created by or associated with the project on a short-term or long-term basis (for example: traffic, construction, operation, other)? Indicate what hours noise would come from this site.

Minimal noise levels associated with logging operations and truck traffic will be created with the project no longer than a two-year period. No long-term impacts.

3) Proposed measures to reduce or control noise impacts, if any:

None.

8. **Land and Shoreline Use**

a. What is the current use of the site and adjacent properties? *(Site includes the complete proposal, e.g. rock pits and access roads.)*

Timber production and forest management activities.

b. Has the site been used for agriculture? If so, describe. **No.**

c. Describe any structures on the site. **None.**

d. Will any structures be demolished? If so, what? **No.**

e. What is the current zoning classification of the site? **Forestry**

f. What is the current comprehensive plan designation of the site? **Long-term forestry.**

g. If applicable, what is the current shoreline master program designation of the site? **N/A**

h. Has any part of the site been classified as an "environmentally sensitive" area? If so, specify. **No.**

i. Approximately how many people would reside or work in the completed project? **None.**

j. Approximately how many people would the completed project displace? **None.**

k. Proposed measures to avoid or reduce displacement impacts, if any: **None.**

l. Proposed measures to ensure the proposal is compatible with existing and projected land uses and plans, if any:

This proposal is consistent with the HCP, PSF and current Forest Practices rules as they apply in conjunction with current land use classifications.

9. Housing

a. Approximately how many units would be provided, if any? Indicate whether high, middle, or low-income housing.

None.

b. Approximately how many units, if any, would be eliminated? Indicate whether high, middle, or low-income housing.

None.

c. Proposed measures to reduce or control housing impacts, if any:

None.

10. Aesthetics

a. What is the tallest height of any proposed structure(s), not including antennas; what is the principle exterior building material(s) proposed?

Not applicable.

b. What views in the immediate vicinity would be altered or obstructed?

1) Is this proposal visible from a residential area, town, city, developed recreation site, or a scenic vista?
☐*No* ☒*Yes, viewing location:*

Towns of Doty and Dryad.

2) Is this proposal visible from a major transportation or designated scenic corridor (county road, state or interstate highway, US route, river, or Columbia Gorge SMA)?
☐*No* ☒*Yes, scenic corridor name:*

State Route 6.

3) How will this proposal affect any views described in 1) or 2) above?

The timber harvest activity may alter the middle ground to background view of the forest structure. However, it is consistent with other past and recent forest practice activities in this area and should blend in with the overall view.

c. Proposed measures to reduce or control aesthetic impacts, if any:

Retention tree clumps and individually scattered trees remaining following the proposed harvest will reduce the visual impacts of the harvest. RMZs averaging 195-200 feet wide along type 3 streams and a minimum of 100 feet wide along type 4 streams will be left after harvest. The site will be replanted with native conifer species after harvest activities.

11. Light and Glare

a. What type of light or glare will the proposal produce? What time of day would it mainly occur?

None.

b. Could light or glare from the finished project be a safety hazard or interfere with views?

None.

c. What existing off-site sources of light or glare may affect your proposal?

None.

d. Proposed measures to reduce or control light and glare impacts, if any:

None.

12. Recreation

a. What designated and informal recreational opportunities are in the immediate vicinity?

Dispersed informal recreation in the form of hunting, berry picking, sightseeing, etc.

b. Would the proposed project displace any existing recreational uses? If so, describe:

Recreation will be temporarily displaced during logging operations in the timber harvest area.

c. Proposed measures to reduce or control impacts on recreation, including recreation opportunities to be provided by the project or applicant, if any:

None.

13. Historic and Cultural Preservation

a. Are there any places or objects listed on, or proposed for national, state, or local preservation registers known to be on or next to the site? If so, generally describe.

No.

b. Generally describe any landmarks or evidence of historic, archaeological, scientific, or cultural importance known to be on or next to the site.

Artifacts were found on or near the proposal area.

c. Proposed measures to reduce or control impacts, if any:
(Include all meetings or consultations with tribes, archaeologists, anthropologists or other authorities.)

This proposal was screened for potential archaeological sites and artifacts using the P&T special concerns report, Historical Topographic and GLO maps, and during the pre-sales phase. A site protection plan was generated and submitted to DAHP by DNR's archaeologist. In the event that any additional unknown archaeological resources are encountered, ground disturbing activities would be halted and our Agency's Archaeologist will be contacted to survey the site and develop an additional Site Protection Plan.

14. Transportation

a. Identify public streets and highways serving the site, and describe proposed access to the existing street system. Show on site plans, if any.

This proposal will use forest roads and is accessed by Highway 6, Stevens Road, Elk Creek Road, and Chandler Road.

1) Is it likely that this proposal will contribute to an existing safety, noise, dust, maintenance, or other transportation impact problem(s)?

No.

b. Is site currently served by public transit? If not, what is the approximate distance to the nearest transit stop?

No; approximately 6 miles to the nearest transit stop in the town of Doty.

c. How many parking spaces would the completed project have? How many would the project eliminate?

None.

d. Will the proposal require any new roads or streets, or improvements to existing roads or streets, not including driveways? If so, generally describe (indicate whether public or private).

See A.11.c.

1) How does this proposal impact the overall transportation system/circulation in the surrounding area, if at all?

This proposal will temporarily increase the traffic by up to 20 vehicles and log truck round trips per day and should not affect the overall transportation system in the area.

e. Will the project use (or occur in the immediate vicinity of) water, rail, or air transportation? If so, generally describe.

No.

f. How many vehicular trips per day would be generated by the completed project? If known, indicate when peak volumes would occur.

Up to 20 round trips per day could occur during road building and logging operations. After harvest activities are complete, occasional vehicular trips to the site will be generated for future forest management purposes.

g. Proposed measures to reduce or control transportation impacts, if any:

None.

15. Public Services

a. Would the project result in an increased need for public services (for example: fire protection, police protection, health care, schools, other)? If so, generally describe.

No.

b. Proposed measures to reduce or control direct impacts on public services, if any.

Not applicable.

16. **Utilities**

a. Circle utilities currently available at the site: electricity, natural gas, water, refuse service, telephone, sanitary sewer, septic system, other.

None.

b. Describe the utilities that are proposed for the project, the utility providing the service, and the general construction activities on the site or in the immediate vicinity which might be needed.

None.

C. **SIGNATURE**

The above answers are true and complete to the best of my knowledge. I understand that the lead agency is relying on them to make its decision.

Completed by: Mary Beaver Usakaimo Forester 1 Product Sales Forester Date: 10/14/09
Title

Reviewed by: Marcus A. Johns Date: 10/16/09
State Lands Assistant Manager

Comments: _____